

# **Level 2 Technical Award in Digital Technologies (5220-20)**

October 2017 Version 4.0

## **Qualification Handbook**

## Qualification at a glance

<b>Industry area</b>	Digital
<b>City &amp; Guilds qualification number</b>	5220-20
<b>Age group</b>	14 – 16 (Key Stage 4)
<b>Assessment</b>	<p>To gain this qualification, candidates must successfully achieve the following assessments:</p> <ul style="list-style-type: none"> <li>• One externally set, externally moderated assignment</li> <li>• One externally set, externally marked exam, sat under examination conditions</li> </ul>
<b>Grading</b>	<p>This qualification is graded Pass/Merit/Distinction/Distinction*</p> <p>For more information on grading, please see Section 6: Grading.</p>
<b>Approvals</b>	This qualification requires full centre and qualification approval.
<b>Support materials</b>	<p>Sample assessments</p> <p>Guidance for delivery</p> <p>Guidance on use of marking grids</p>
<b>Registration and certification</b>	Registration and certification of this qualification is through the Walled Garden, and is subject to end dates.
<b>External quality assurance</b>	This qualification is externally quality assured by City & Guilds. Internally marked assignments are subject to external moderation. There is no direct claim status available for this qualification.

Title and level	Size (GLH)	TQT	City & Guilds qualification number	Ofqual accreditation number
Level 2 Technical Award in Digital Technologies	120	160	5220-20	601/7242/3

Version and date	Change detail	Section
1.1 May 2016	Small typographical errors	Throughout
	TQT added for qualifications Assessment component titles amended	1. Introduction
	Employer involvement guidance updated throughout	4. Employer involvement
	Summary of assessment methods and conditions	5. Assessment
	Moderation and standardisation of assessment updated throughout	6. Moderation and standardisation of assessment
	Awarding individual assessments Awarding grades and reporting results	7. Grading
	Enquiries about results Re-sits and shelf-life of assessment results Malpractice Access arrangements and special consideration	8. Administration
2.0 February 2017	Units renumbered	Throughout
3.0 May 2017	External theory test revised with updated coverage Assessment Objectives o6 – o8 removed from synoptic assignment coverage and weightings updated Branding Changes	5. Moderation and standardisation
		City and Guilds Logo
4.0 October 2017	Exam specification weightings adjusted slightly	4 Assessment

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# 1 Introduction

## What is this qualification about?

The following purpose statement relates to the **Level 2 Technical Award in Digital Technologies**.

Area	Description
OVERVIEW	
Who is this qualification for?	<p>This qualification allows you to explore how digital technologies are used in everyday life.</p> <p>If you are interested in how information is communicated in different ways, why we use networks, what to consider when creating web pages and how you can ensure data you gather is of good quality, then this qualification is for you.</p>
What will the student study as part of this qualification?	<p>You will study the concepts and features of application software programmes and networks. You will explore the features available across different types of software and tools. You will understand concepts of text formatting and file manipulation to develop creative technical skills in digital technology. You will also understand how data can be gathered and used to make decisions, to analyse and present structured data which has been gathered from primary and secondary resources.</p> <p>This qualification has four units:</p> <ul style="list-style-type: none"><li>• Principles of digital technology</li><li>• Digital technology communications</li><li>• Creative use of digital technology</li><li>• Collection and use of data</li></ul>
What knowledge and skills will the student develop as part of this qualification and how might these be of use and value in further studies?	<p>The qualification develops the following knowledge, understanding and skills:</p> <ul style="list-style-type: none"><li>• types of application software and networks</li><li>• personal risks when using the internet and compliance with laws that affect the use of digital technologies</li><li>• explore appropriate channels digital communication channels for specified target audience</li><li>• development of technical skills in creating creative digital content for communication, including animations, social media, videos, websites</li><li>• types of different file formats and their use</li><li>• methods of collecting reliable primary and secondary data</li></ul>

	<ul style="list-style-type: none"> <li>• how software is used in data processing and management</li> <li>• plan, design and implement database to store and analyse data.</li> </ul> <p>Your understanding and skills can be developed further through progression to other qualifications, such as A levels or specific to a sector, including:</p> <ul style="list-style-type: none"> <li>• City &amp; Guilds Level 3 Advanced Technicals in Digital Technologies</li> </ul> <p>You will also find the understanding and skills useful to progress to an apprenticeship.</p>
Which subjects will complement this course?	GCSEs in Computer Science, English, and Maths will complement this qualification.

## Qualification structure

For the **Level 2 Technical Award in Digital Technologies** the teaching programme must cover the content detailed in the structure below:

Unit number	Unit title	GLH
251	Principles of digital technology	30
252	Digital technology communications	30
253	Creative use of digital technology	30
254	Collection and use of data	30

## Total qualification time (TQT)

Total Qualification Time (TQT) is the total amount of time, in hours, expected to be spent by a Learner to achieve a qualification. It includes both guided learning hours (which are listed separately) and hours spent in preparation, study and assessment.

Title and level	GLH	TQT
Level 2 Technical Award in Digital Technologies	120	160

## Assessment requirements

To achieve the **Level 2 Technical Award in Digital Technologies** candidates must successfully complete **both** the mandatory assessment components.

Component number	Title
021	Level 2 Digital Technologies – Synoptic assignment
020	Level 2 Digital Technologies - Theory exam (1)*

*\*Number of mandatory assessments per assessment type*



## 2 Centre requirements

### Approval

New centres will need to gain centre approval. Existing centres who wish to offer this qualification must go through City & Guilds' **full** Qualification Approval Process. There is no fast track approval for this qualification. Please refer to the City & Guilds website for further information on the approval process: [www.cityandguilds.com](http://www.cityandguilds.com)

### Resource requirements

Centre staff should familiarise themselves with the structure, content and assessment requirements of the qualification before designing a course programme.

### Centre staffing

Staff delivering this qualification must be able to demonstrate that they meet the following requirements:

- be technically competent in the areas in which they are delivering
- be able to deliver across the breadth and depth of the content of the qualification being taught
- have recent relevant teaching and assessment experience in the specific area they will be teaching, or be working towards this
- demonstrate continuing CPD.

### Physical resources

Centres must be able to demonstrate that they have access to the equipment and technical resources required to deliver these this qualifications and its assessment.

### Internal Quality Assurance

Internal quality assurance is key to ensuring accuracy and consistency of assessment being marked by tutors. Internal Quality Assurers (IQAs) monitor the work of all tutors involved with a qualification to ensure they are applying standards consistently throughout assessment activities. IQAs must have, and maintain, an appropriate level of technical competence and be qualified to make both marking and quality assurance decisions through a teaching qualification or recent, relevant experience.

### Learner entry requirements

Centres must ensure that all learners have the opportunity to gain the qualification through appropriate study and training, and that any prerequisites stated in the *What is this qualification about?* section are met when registering on this qualification.

### Age restrictions

This qualification is approved for learners aged 14 – 16.

### 3 Delivering technical qualifications

#### Initial assessment and induction

An initial assessment of each learner should be made before the start of their programme to identify:

- if the learner has any specific learning or training needs,
- support and guidance they may need when working towards their qualification,
- the appropriate type and level of qualification.

We recommend that centres provide an introduction so that learners fully understand the requirements of the qualification, their responsibilities as a learner, and the responsibilities of the centre. This information can be recorded on a learning contract.

#### Support materials

The following resources are available for this qualification:

Description	How to access
Sample assessments Guidance for delivery Guidance on use of marking grids	Available 2016 on the qualification pages on the City & Guilds Website: <a href="http://www.cityandguilds.com">www.cityandguilds.com</a>

## 4 Assessment

### Summary of assessment methods and conditions

Component numbers	Assessment method	Description and conditions
021	Synoptic assignment	<p>The synoptic assignment is <b>externally set, internally marked and externally moderated</b>. The assignment requires candidates to identify and use effectively in an integrated way an appropriate selection of skills, techniques, concepts, theories, and knowledge from across the content area. Candidates will be judged against the assessment objectives.</p> <p>Assignments will be released to centres as per dates indicated in the Assessment and Examination timetable published on our website.</p> <p>Centres will be required to maintain the security of all live assessment materials. Assignments will be password protected and released to centres through a secure method.</p> <p>There will be one opportunity within each academic year to sit the assignment. Candidates who fail the assignment will have one re-sit opportunity. The re-sit opportunity will be in the next academic year, and will be the assignment set for that academic year once released to centres. If the re-sit is failed, the candidate will fail the qualification.</p> <p>Please note that for externally set assignments City &amp; Guilds provides guidance and support to centres on the marking and moderation process.</p>

020	Externally marked exam	<p>The exam is <b>externally set and externally marked</b>, and will be taken online through City &amp; Guilds' computer-based testing platform.</p> <p>The exam is designed to assess the candidate's depth and breadth of understanding across content in the qualification at the end of the period of learning, using a range of question types and will be sat under invigilated examination conditions. See JCQ requirements for details: <a href="http://www.jcq.org.uk/exams-office/ice---instructions-for-conducting-examinations">http://www.jcq.org.uk/exams-office/ice---instructions-for-conducting-examinations</a></p> <p>The exam specification shows the coverage of the exam across the qualification content.</p> <p>Candidates who fail the exam at the first sitting will have <b>one</b> opportunity to re-sit. If the re-sit is failed the candidate will fail the qualification. For exam dates, please refer to the Assessment and Examination timetable.</p>
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### What is synoptic assessment?

Technical qualifications are based around the development of a toolkit of knowledge, understanding and skills that an individual needs in order to have the capability to work in a particular industry or occupational area. Individuals in all technical areas are expected to be able to apply their knowledge, understanding and skills in decision making to solve problems and achieve given outcomes independently and confidently.

City & Guilds technical qualifications require candidates to draw together their learning from across the qualification to solve problems or achieve specific outcomes by explicitly assessing this through the synoptic assignment component.

In this externally set, internally marked and externally moderated assessment the focus is on bringing together, selecting and applying learning from across the qualification rather than demonstrating achievement against units or subsets of the qualification content. The candidate will be given an appropriately levelled, substantial, occupationally relevant problem to solve or outcome to achieve. For example this might be in the form of a briefing from a client, leaving the candidate with the scope to select and carry out the processes required to achieve the client's wishes, as they would in the workplace.

Candidates will be marked against assessment objectives (AOs) such as their breadth and accuracy of knowledge, understanding of concepts, and the quality of their technical skills as well as their ability to use what they have learned in an integrated way to achieve a considered and high quality outcome.

### How the assignment is synoptic for this qualification

The typical assignment brief is to analyse information, conduct research and produce a website with a specific purpose.

Learners will research statistical information containing the responses of young people and adults to a survey on online safety issues. They will analyse the information gathered and use it to produce a website aimed at providing advice and guidance to young people.

This will require the candidate to analyse primary and secondary research in order to show patterns that appear across the data. They should be able to construct a database and create structured reports and graphical representations of the information.

They will need to communicate with a specific audience using their knowledge of technical web design and appropriate language skills for the target audience in order to produce an analysis of the data. Finally they should evaluate their methods, processes and results in written format.

### **External exam for stretch, challenge and integration**

The external assessment will draw from across the full content of the qualification, using a range of shorter questions to confirm breadth of knowledge and understanding. Extended response questions are included, giving candidates the opportunity to demonstrate higher level understanding and integration through discussion, analysis and evaluation, and ensuring the assessment can differentiate between 'just able' and higher achieving candidates.

## Assessment objectives

The assessments for this qualification are set against a set of assessment objectives (AOs) which are used across all City & Guilds Technicals to promote consistency among qualifications of a similar purpose. They are designed to allow judgement of the candidate to be made across a number of different categories of performance.

Each assessment for the qualification has been allocated a set number of marks against these AOs based on weightings recommended by stakeholders of the qualification. This mark allocation remains the same for all versions of the assessments, ensuring consistency across assessment versions and over time.

The following table explains all AOs in detail, including weightings for the synoptic assignments. In some cases, due to the nature of a qualification's content, it is not appropriate to award marks for some AOs. Weightings for exams (AOs 1, 2 and 4 only) can be found with the exam specification.

Assessment objective	Level 2 Technical Award in Digital Technologies Typical expected evidence of knowledge, understanding and skills	Approximate weighting
<b>AO1</b> Recalls knowledge from across the breadth of the qualification.	Relevant legislation, media file types, available database software	10%
<b>AO2</b> Demonstrates understanding of concepts, theories and processes from across the breadth of the qualification.	Gathering and presenting data including data patterns and legislation	30%
<b>AO3</b> Demonstrates technical skills from across the breadth of the qualification.	Database creation, chart creation, use of media file types, website creation, website navigation, use of language, copyright compliance, web browser functionality	25%
<b>AO4</b> Applies knowledge, understanding and skills from across the breadth of the qualification in an integrated and holistic way to achieve specified purposes.	Bringing primary and secondary research together, website structure and content, evaluation of processes, navigation system,	25%
<b>AO5</b> Demonstrates perseverance in achieving high standards and attention to detail while showing an understanding of wider impact of their actions.	Database structure, database fields, reporting structure, language to include tone of voice, media file type preparation, evaluation such as data patterns, consideration of the processes.  Image relevance and originality, webpage aesthetics and layout, text quality of language and originality	10%

## Exam specification

AO weightings per exam

AO	Exam weighting (approx. %)
AO1 Recalls knowledge from across the breadth of the qualification.	22.5
AO2 Demonstrates understanding of concepts, theories and processes from across the breadth of the qualification.	55
AO4 Applies knowledge, understanding and skills from across the breadth of the qualification in an integrated and holistic way to achieve specified purposes.	22.5

The way the exam covers the content of the qualification is laid out in the table below:

**Assessment type:** Examiner marked, written exam, usually delivered online\*

**Assessment conditions:** Invigilated examination conditions

**Grading:** X/P/M/D

Exam 020	Duration: 2 hours		
Unit		Number of marks	%
251	Principles of digital technology	20	25
252	Digital technology communications	14	17.5
253	Creative use of digital technology	20	25
254	Collection and use of data	8	10
N/A	Integration across the units	18	22.5
Total		80	100

\*These exams are sat under invigilated examination conditions, as defined by the JCQ:  
<http://www.jcq.org.uk/exams-office/ice---instructions-for-conducting-examinations>

Entry for exams can be made through the City & Guilds Walled Garden.

## 5 Moderation and standardisation of assessment

City & Guilds' externally set assignments for technical qualifications are designed to draw from across the qualifications' content, and to contribute a significant proportion towards the learner's final qualification grade. They are subject to a rigorous external quality assurance process known as external moderation. This process is outlined below. For more detailed information, please refer to 'Marking and moderation - Technicals centre guidance' available to download on the City & Guilds website.

It is vital that centres familiarise themselves with this process, and how it impacts on their delivery plan within the academic year.

### **Supervision and authentication of internally assessed work**

The Head of Centre is responsible for ensuring that internally assessed work is conducted in accordance with City & Guilds' requirements.

City & Guilds requires both tutors and candidates to sign declarations of authenticity. If the tutor is unable to sign the authentication statement for a particular candidate, then the candidate's work cannot be accepted for assessment.

### **Internal standardisation**

For internally marked work<sup>1</sup> the centre is required to conduct internal standardisation to ensure that all work at the centre has been marked to the same standard. It is the Internal Quality Assurer's (IQA's) responsibility to ensure that standardisation has taken place, and that the training includes the use of reference and archive materials such as work from previous years as appropriate.

### **Provision for reworking evidence after submission for marking by the tutor**

It is expected that in many cases a candidate who is struggling with a specific piece of work may themselves choose to restart and rectify the situation during their normal allocated time, and before it gets to the stage of it being handed in for final marking by the tutor.

In exceptional circumstances however, where a candidate has completed the assignment in the required timescales, and has handed it in for marking by the tutor but is judged to have significantly underperformed, may be allowed to rework or supplement their original evidence for remarking prior to submission for moderation. For this to be allowed, the centre must be confident that the candidate will be able to improve their performance without additional feedback from their tutor and within the required timescales ie the candidate has shown they can perform sufficiently better previously in formative assessments.

The reworked and/or supplemented original evidence must be remarked by the tutor in advance of the original moderation deadline and the moderator informed of any candidates who have been allowed to resubmit evidence.

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<sup>1</sup> For any internally assessed optional unit assignments, the same process must be followed where assessors must standardise their interpretation of the assessment and grading criteria.



The process must be managed through the IQA. The justification for allowing a resubmission should be recorded and made available on request. The use of this provision will be monitored by City & Guilds.

### Internal appeal

Centres must have an internal process in place for candidates to appeal the marking of internally marked components, ie the synoptic assignment and any optional unit assignments. This must take place before the submission of marks for moderation. The internal process must include candidates being informed of the marks (or grades) the centre has given for internally assessed components, as they will need these to make the decision about whether or not to appeal.

Centres cannot appeal the outcome of moderation for individual candidates, only the moderation process itself. A request for a review of the moderation process should be made to **appeals@cityandguilds.com**.

### Moderation

Moderation is the process where external markers are standardised to a national standard in order to review centre marking of internally marked assessments. These markers are referred to as 'moderators'. Moderators will mark a representative sample of candidates' work from every centre. Their marks act as a benchmark to inform City & Guilds whether centre marking is in line with City & Guilds' standard.

Where moderation shows that the centre is applying the marking criteria correctly, centre marks for the whole cohort will be accepted.

Where moderation shows that the centre is either consistently too lenient or consistently too harsh in comparison to the national standard, an appropriate adjustment will be made to the marks of the whole cohort, retaining the centre's rank ordering.

Where centre application of the marking criteria is inconsistent, an appropriate adjustment for the whole cohort may not be possible on the basis of the sample of candidate work. In these instances a complete remark of the candidate work may be necessary. This may be carried out by the centre based on feedback provided by the moderator, or carried out by the moderator directly.

Moderation applies to all internally marked assignments. Following standardisation and marking, the centre submits all marks and candidate work to City & Guilds via the moderation platform. The deadline for submission of evidence will be available on Walled Garden. See the *Marking and moderation - Technicals Centre Guidance* document for full details of the requirements and process.

In most cases candidate work will be submitted directly to the moderator for moderation. This includes written work, photographic and pictorial evidence, or video and audio evidence. For some qualifications there will be a requirement for moderators to visit centres to observe practical assessments being undertaken. This will be for qualifications where the assessment of essential learner skills can only be demonstrated through live observation. The purpose of these visits is to ensure that the centre is assessing the practical skills to the required standards, and to provide the moderators with additional evidence to be used during moderation. These visits will be planned in advance with the centre for all relevant qualifications.

### **Post-moderation procedures**

Once the moderation process has been completed, the confirmed marks for the cohort are provided to the centre along with feedback from the moderator on the standard of marking at the centre, highlighting areas of good practice, and potential areas for improvement. This will inform future marking and internal standardisation activities.

City & Guilds will then carry out awarding, the process by which grade boundaries are set with reference to the candidate evidence available on the platform

### **Centres retaining evidence**

Centres must retain assessment records for each candidate for a minimum of three years. To help prevent plagiarism or unfair advantage in future versions, candidate work may not be returned to candidates. Samples may however be retained by the centre as examples for future standardisation of marking.

## 6 Grading

### Awarding individual assessments

Individual assessments will be graded, by City & Guilds, as pass/merit/distinction where relevant. The grade boundaries for pass and distinction for each assessment will be set through a process of professional judgement by technical experts. Merit will usually be set at the midpoint between pass and distinction. The grade descriptors for pass and distinction, and other relevant information (eg archived samples of candidate work and statistical evidence) will be used to determine the mark at which candidate performance in the assessment best aligns with the grade descriptor in the context of the qualification's purpose. Boundaries will be set for each version of each assessment to take into account relative difficulty.

Please note that as the Merit grade will usually be set at the arithmetical midpoint between pass and distinction, there are no descriptors for the Merit grade for the qualification overall.

### Grade descriptors

#### To achieve a pass, a candidate will be able to

- Demonstrate the broad knowledge and understanding related to the industry/occupational/technical area, its key principles, practices and legislation.
- Describe some of the main factors impacting on the industry/occupational/technical area to show good awareness of how the industry/occupational/technical area is shaped by the social, environmental, and business environment it operates within.
- Use the broad technical and specific terminology commonly used in the industry/occupational/technical area with accuracy.
- Demonstrate the application of relevant theory and understanding to solve straightforward problems.
- Interpret briefs for routine tasks, attending to the key aspects, and showing a secure understanding of the main concepts and themes across the industry/occupational/technical area.
- Carry out routine planning which shows an ability to identify the relevant information in the brief and use broad knowledge and understanding from across the qualification (including basic technical information) to interpret what a fit for purpose outcome would be, developing a plausible plan to achieve it.
- Achieve an outcome which meets the key requirements of the brief with some success.
- Identify and reflect on the most obvious measures of success for the task and evaluate how successful they have been in meeting the intentions of the plan.
- Work safely throughout, independently carrying out routine tasks and procedures, and having some confidence in attempting more complex tasks.

#### To achieve a distinction, a candidate will be able to

- Demonstrate an excellent knowledge and understanding related to the industry/occupational/technical area, its key principles, practices and legislation.
- Analyse the impact of different factors on the industry/occupational/technical area to show good understanding of how it is shaped by the social, environmental, and business environment it operates within.

- Use technical and industry/occupation specific terminology commonly used in the industry area accurately and with confidence.
- Demonstrate the application of relevant theory and understanding to solve problems which are sometimes non-routine.
- Analyse the brief in detail, showing confident understanding of concepts and themes from across the qualification content, bringing these together to develop a clear and stretching plan that would credibly achieve a fit for purpose outcome.
- Achieve an outcome which shows an attention to detail in its planning, development and completion, so that it meets the brief completely and to a high quality.
- Carry out an evaluation focussing on relevant quality points, identifying areas of development/ improvement as well as assessing the fitness for purpose of the outcome.

## Awarding grades and reporting results

The overall qualification grade will be calculated based on aggregation of the candidate's achievement in each of the assessments for the mandatory units, taking into account the assessments' weighting. The **Level 2 Technical Award in Digital Technologies** will be reported on a four grade scale: Pass, Merit, Distinction, Distinction\*.

All assessments **must** be achieved at a minimum of Pass for the qualification to be awarded. Candidates who fail to reach the minimum standard for grade Pass for an assessment(s) will not have a qualification grade awarded and will not receive a qualification certificate.

The contribution of assessments towards the overall qualification grade is as follows:

Assessment method	Grade scale	% contribution
Synoptic Assignment	X/P/M/D	60%
Exam	X/P/M/D	40%

Both synoptic assignments and exams are awarded (see 'Awarding individual assessments', at the start of Section 7, above), and candidates' grades converted to points. The minimum points available for each assessment grade is listed in the table below. A range of points between the Pass, Merit and Distinction boundaries will be accessible to candidates. For example a candidate that achieves a middle to high Pass in an assessment will receive between 8 and 10 points, a candidate that achieves a low to middle Merit in an assessment will receive between 12 and 14 points. The points above the minimum for the grade for each assessment are calculated based on the candidate's score in that assessment.

	Pass	Merit	Distinction
Assignment: 60%	6	12	18
Exam: 40%	6	12	18

The candidate's points for each assessment are multiplied by the % contribution of the assessment and then aggregated. The minimum points required for each qualification grade are as follows:

Qualification Grade	Points
Distinction*	20.5
Distinction	17
Merit	11
Pass	6

Candidates achieving Distinction\* will be the highest achieving of the Distinction candidates.

## 7 Administration

Approved centres must have effective quality assurance systems to ensure valid and reliable delivery and assessment of qualifications. Quality assurance includes initial centre registration by City & Guilds and the centre's own internal procedures for monitoring quality assurance procedures.

Consistent quality assurance requires City & Guilds and its associated centres to work together closely; our Quality Assurance Model encompasses both internal quality assurance (activities and processes undertaken within centres) and external quality assurance (activities and processes undertaken by City & Guilds).

For this qualification, standards and rigorous quality assurance are maintained by the use of:

- internal quality assurance
- City & Guilds external moderation.

In order to carry out the quality assurance role, Internal Quality Assurers (IQAs) must have and maintain an appropriate level of technical competence and have recent relevant assessment experience. For more information on the requirements, refer to *Section 2: Centre requirements* in this handbook.

To meet the quality assurance criteria for this qualification, the centre must ensure that the following procedures are followed:

- suitable training of staff involved in the assessment of the qualification to ensure they understand the process of marking and standardisation
- completion by the person responsible for internal standardisation of the Centre Declaration Sheet to confirm that internal standardisation has taken place
- the completion by candidates and supervisors/tutors of the record form for each candidate's work.

### External quality assurance

City & Guilds will undertake external moderation activities to ensure that the quality assurance criteria for this qualification are being met. Centres must ensure that they co-operate with City & Guilds staff and representatives when undertaking these activities.

City & Guilds requires the Head of Centre to

- facilitate any inspection of the centre which is undertaken on behalf of City & Guilds
- make arrangements to receive, check and keep assessment material secure at all times,
- maintain the security of City & Guilds confidential material from receipt to the time when it is no longer confidential and
- keep completed assignment work and examination scripts secure from the time they are collected from the candidates to their dispatch to City & Guilds.

### Enquiries about results

The services available for enquiries about results include a review of marking for exam results and review of moderation for internally marked assessments.

For further details on enquiries and appeals process and for copies of the application forms, please visit the **appeals page** of the City & Guilds website at **[www.cityandguilds.com](http://www.cityandguilds.com)**.

### Re-sits and shelf-life of assessment results

Candidates who have failed an assessment or wish to re-take it in an attempt to improve their grade, can re-sit assessments **once only**. The best result will count towards the final qualification. See guidance on individual assessment types in Section 5.

### Factors affecting individual learners

If work is lost, City & Guilds should be notified immediately of the date of the loss, how it occurred, and who was responsible for the loss. Centres should use the JCQ form, JCQ/LCW, to inform City & Guilds Customer Services of the circumstances.

Learners who move from one centre to another during the course may require individual attention. Possible courses of action depend on the stage at which the move takes place. Centres should contact City & Guilds at the earliest possible stage for advice about appropriate arrangements in individual cases.

### Malpractice

Please refer to the City & Guilds guidance notes *Managing cases of suspected malpractice in examinations and assessments*. This document sets out the procedures to be followed in identifying and reporting malpractice by candidates and/or centre staff and the actions which City & Guilds may subsequently take. The document includes examples of candidate and centre malpractice and explains the responsibilities of centre staff to report actual or suspected malpractice. Centres can access this document on the City & Guilds website.

Examples of candidate malpractice are detailed below (please note that this is not an exhaustive list):

- falsification of assessment evidence or results documentation
- plagiarism of any nature
- collusion with others
- copying from another candidate (including the use of ICT to aid copying), or allowing work to be copied
- deliberate destruction of another's work
- false declaration of authenticity in relation to assessments
- impersonation.

These actions constitute malpractice, for which a penalty (eg disqualification from the assessment) will be applied.

Where suspected malpractice is identified by a centre after the candidate has signed the declaration of authentication, the Head of Centre must submit full details of the case to City & Guilds at the earliest opportunity.

Please refer to the form in the document *Managing cases of suspected malpractice in examinations and assessments*.

## Access arrangements and special consideration

Access arrangements are adjustments that allow candidates with disabilities, special educational needs and temporary injuries to access the assessment and demonstrate their skills and knowledge without changing the demands of the assessment. These arrangements must be made before assessment takes place.

It is the responsibility of the centre to ensure at the start of a programme of learning that candidates will be able to access the requirements of the qualification.

Please refer to the *JCQ access arrangements and reasonable adjustments* and *Access arrangements - when and how applications need to be made to City & Guilds* for more information. Both are available on the City & Guilds website: <http://www.cityandguilds.com/delivering-our-qualifications/centre-development/centre-document-library/policies-and-procedures/access-arrangements-reasonable-adjustments>

### Special consideration

We can give special consideration to candidates who have had a temporary illness, injury or indisposition at the time of the examination. Where we do this, it is given after the examination.

Applications for either access arrangements or special consideration should be submitted to City & Guilds by the Examinations Officer at the centre. For more information please consult the current version of the JCQ document, *A guide to the special consideration process*.



UAN:	K/507/7027
Level:	2
GLH:	30

### What is this unit about?

The purpose of this unit is to provide the learner with an introduction to digital technologies which is built upon within the other units of this qualification.

Learners will explore the concepts and features of application software programmes and networks. This will include different file formats, the application software associated with them and be able to describe types of commonly used storage media.

They will investigate cyber safety including the threats to personal safety and legislation that governs the use of digital technologies when interacting with others.

The learner may be introduced to this unit by asking themselves questions such as:

- What file formats are associated with application software?
- What are the commonly used types of storage media?
- Why use a network?
- What components make up a network?
- What are the personal risks when using the internet?
- What laws affect my use of digital technologies?

### Learning outcomes

In this unit, learners will be able to:

1. Understand application software
2. Understand networks
3. Understand cyber safety and compliance

## Scope of content

This section gives details of the scope of content to be covered in the teaching of the unit to ensure that all the learning outcomes can be achieved.

## Learning outcome:

### 1. Understand application software

## Topics

### 1.1 Types of application software

### 1.2 Files and storage

#### Topic 1.1

Learners will understand the purpose of using different types of application software including:

- Database
- Spreadsheets
- Presentation software
- Word Processing
- Web authoring software
- Specialist software eg audio, visual, graphics

#### Topic 1.2

Learners will know different file extensions and their associated applications, including:

- .psd (Photoshop)
- .pdf (Acrobat)
- .docx (MS Word)
- .xlsx (MS Excel)
- .pptx (MS PowerPoint)
- .odf (Open document format)
- .txt (Plain text)
- .html (Web authoring tools)
- .Jpg (Image editing)
- .mp3 (Audio)

Learners will understand the types of storage media that can be used to store data, including:

- Optical
- Magnetic hard disc drive
- Solid-state
- Cloud

## Learning outcome:

### 2. Understand networks

#### Topics

- 2.1 Advantages and disadvantages of networks
- 2.2 Network components
- 2.3 Network protocols
- 2.4 Network security

##### Topic 2.1

Learners will understand the main advantages and disadvantages of networks:

- Advantages eg Resource and file sharing
- Disadvantages eg Security issues, failure of devices can affect the whole network

##### Topic 2.2

Learners will know the different components that are used to implement networks including:

- Network topologies:
  - Star
  - Mesh
  - Infrastructure mode (wireless)
  - Ad hoc mode (wireless)
- Types of networks
  - Client server
  - Peer to peer
  - Personal area networks (PAN)
  - Local area networks (LAN)
  - Wide area network (WAN)

They must also describe the functions of the main interconnection devices used to implement networks, including:

- Routers wired/wireless: networking device that forwards data packets between computer networks
- Switches: connects devices together on a computer network
- Wireless access points: allows wireless devices to connect to wired network using Wi-Fi
- Network interface cards(NIC): allows physical connection between the computer and network cable

Learners will know the types of media used to implement networks and where they are used, including:

- Copper cables:
  - Linking pcs to switches/routers
- Fibre optic cables:
  - Telecommunication networks
- Wireless
  - Wi-Fi eg home usage, public access
  - Cellular eg wide area mobile communication

### Topic 2.3

Learners will understand the purpose of a network protocol

Learners will understand how common protocols are used on networks, including:

- IP
- POP<sub>3</sub>
- HTTP
- HTTPS

### Topic 2.4

Learners will understand the methods of securing networks, including:

- System level security:
  - Authentication eg user name and password
  - Permissions eg file and sharing
  - Data encryption eg public/private key encryption, whole disk encryption
  - Anti-virus software
- Network level security eg firewalls
- Physical security eg biometrics, locks

## Learning outcome:

### 3. Understand cyber safety and compliance

#### Topics

3.1 Cyber safety

3.2 Digital technologies legislation

### Topic 3.1

Learners will understand the personal risks associated with digital engagement and ways in which they can be mitigated, including:

- Cyber bullying
- Harassment eg Trolling
- Grooming
- Sexting
- Inability to retract information posted online
- Identity theft

Learners will know the policies that impact on their own use of digital engagement, including:

- Terms and conditions of use eg social media sites
- Usage policies
- Password policies
- Plagiarism
- Copyright

### Topic 3.2

Learners will know about the legislation that affects the use of digital technologies. This will include the following Acts:

- Data Protection
- Computer Misuse
- Copyright Design and Patents
- Communications
- Health and safety (Display screen regulations eg posture, lighting, RSI, eye strain)

### Guidance for delivery

The purpose of this unit is to provide the foundation on which the remaining units of this qualification build upon.

The learners should be encouraged to investigate various application software and their associated file formats. Initially this should be based on the software that they are using locally, once they have an understanding of these they should research additional software.

When discussing networks real life examples should be used to reinforce the delivery. These could include using networks as a medium for hosting multi-player games.

When discussing cyber safety it will be beneficial to provide recent and relevant examples of situations where individuals have put themselves at risk. The references below contain suitable videos and materials for delivery of this topic. Tutors should use examples of local polices such as bullying, safe usage/internet policy and should raise awareness of the learners individuals responsibilities.

When discussing health and safety the learner should be made aware of the risks involved in the prolonged use of digital devices. These should include repetitive strain injury (RSI), eye strain and the importance of taking breaks.

### Suggested learning resources

#### Books

How Networks Work  
Published by: QUE, 2002  
ISBN-13 9780789727534

Derfler, Jr.F.J & Freed, L

A Brief Guide to Cloud Computing: An essential guide to the next computing revolution  
Published by: Robinson, 2010  
ISBN-13 9781849014069

Barnatt.C

#### Magazines

- Computeractive
- PC Advisor
- PC Mag UK
- PC Pro

## **Websites**

Online Technical Dictionary for \IT Professionals

<http://www.webopedia.com>

GCF Learn Free

<http://www.gcflearnfree.org/technology>

You Tube (orange digital dirt)

<https://www.youtube.com/watch?v=JJfw3xt4emY>

Digitally confident

<http://www.digitallyconfident.org>

BBC Bitesize

<http://www.bbc.co.uk/schools/gcsebitesize/ict/databases/6datasecurityrev1.shtml>

IT Security

<http://www.itsecurity.com>

Sophos

<https://www.sophos.com/en-us-/security-news-trends/security-Trends/threatsaurus>

UAN:	M/507/7028
Level:	2
GLH:	30

### What is this unit about?

The purpose of this unit is to provide the learner with an understanding of communicating digital content to an audience using various channels.

Learners will explore the features available across different types of software and tools. This unit also looks at the different ways that information can be targeted to specific audiences. Learners will also have to consider the personal risks associated with digital communications.

The learner may be introduced to this unit by asking themselves questions such as:

- What channels are available for digital communication?
- How do I identify the target audience?
- What software and tools are available for different communication needs?
- What risks are associated with digital communication?

### Learning outcomes

In this unit, learners will be able to:

1. Understand digital communication technologies
2. Use software to communicate digital content

## Scope of content

This section gives details of the scope of content to be covered in the teaching of the unit to ensure that all the learning outcomes can be achieved.

## Learning outcome:

### 1. Understand digital communication technologies

## Topics

- 1.1 Digital communication channels
- 1.2 Target audiences
- 1.3 Legislative and local constraints
- 1.4 Risks associated with digital communication

### Topic 1.1

Learners will evaluate different digital communication channels in order to select the most suitable method of communicating information to different audiences. This will include:

- Internet:
  - Web sites
  - Voice over internet protocol (VoIP)
  - Webcasts/Podcasts
  - SMS: one to one messaging, one to many messaging
  - Blogs
  - Micro blogs
  - Social networks
- E-mail:
  - POP3, IMAP, SMTP
  - Email marketing
- Mobile technologies:
  - Short messaging service (SMS)
  - Multimedia messaging service (MMS)

### Topic 1.2

Learners will understand the characteristics of target audiences and the different ways in which they engage with digital communications:

- Characteristics:
  - Demographics eg household profiles, age, gender, economic status, race, employment
  - Geography
  - Personal preferences
  - Hobbies and interests
- Different ways of engagement:
  - Visual eg Images, Graphs, Video
  - Text
  - Audio
  - Multimedia

### Topic 1.3

Learners will know the key points of legislation and local constraints that impact on digital communications:

- Legislation – laws covering:



- Computer misuse
- Copyright constraints
- Data Protection
- Communications Act
- Local constraints – limitations set by:
  - Safe usage policies
  - File naming conventions

#### Topic 1.4

Learners will understand the risks associated with using digital communication and understand mitigation strategies, including:

- Risks
  - Identity theft
  - Phishing
  - Grooming
  - Cyber bullying
  - Sexting
- Mitigation strategies:
  - Non-disclosure of personal information
  - Use correct settings to protect your privacy
  - Don't respond to unsolicited emails
  - Don't communicate with strangers online
  - Use strong passwords
  - Use anti-virus software
  - Report to responsible adult, site provider, relevant authorities
  - Do not put anything online that may compromise you in the future

### Learning outcome:

#### 2. Use software to communicate digital content

### Topics

#### 2.1 Communication software

#### 2.2 Create digital content to communicate information

#### Topic 2.1

Learners will know the different types of software available to create digital content for communication, including:

- presentation
- word processing
- desk top publishing
- image editing
- website publishing
- messaging and email

## Topic 2.2

Learners will understand how to produce digital content to communicate information to a target audience, including:

- Word processing/Desktop publishing software:
  - Text
  - Edited images
  - Hyperlinks within documents to aid navigation
- Presentation software:
  - Text
  - Images
  - Video Files
  - Audio files
- Image editing:
  - Resolution
  - Aspect ratio
  - Cropping
  - Image enhancement eg levels and curves

### Guidance for delivery

The main purpose of this unit is for the learner to develop understanding of the choice of software available to communicate information using digital technology. Learners should be encouraged to research and evaluate the software and tools that are available to produce digital content and engage with emerging technologies.

When learners are considering the types of software and tools required to produce digital content they should consider the types of software available such as Vendor software, Open source software and Shareware.

The learners should have a prior understanding of file formats that are appropriate for use when creating digital content. Tutors must deliver this knowledge as part of the *Principles of Digital Technology* unit.

### Suggested learning resources

#### Books

- |  |                         |
|--|-------------------------|
| • Title: How to communicate your message effectively | Swires-Hennessy, E      |
| • Published by: Wiley-Blackwell, 2014                |                         |
| • ISBN: 8601415782655                                |                         |
| • How to Present at Meetings                         | Hall, G.M & Robinson, N |
| • Published by: BMJ Books, 2011                      |                         |
| • ISBN: 9780470654583                                |                         |

#### Websites

Slideshare	<a href="http://www.slideshare.net">http://www.slideshare.net</a>
BBC Bitesize	<a href="http://www.bbc.co.uk/schools/gcsebitesize/ict/software/webdesignrev1.shtml">http://www.bbc.co.uk/schools/gcsebitesize/ict/software/webdesignrev1.shtml</a>
Gov.UK	<a href="https://www.gov.uk/service-manual/making-software/choosing-technology">https://www.gov.uk/service-manual/making-software/choosing-technology</a>
You Tube	<a href="https://www.youtube.com/watch?v=JJfw3xt4emY">https://www.youtube.com/watch?v=JJfw3xt4emY</a>
Digitally confident	<a href="http://www.digitallyconfident.org">http://www.digitallyconfident.org</a>

UAN:	T/507/7029
Level:	2
GLH:	30

### What is this unit about?

This unit develops learners' understanding and skills in using digital technologies to develop creative products. This will involve the exploration of different file formats, software and techniques that can be used to enhance the end product.

It is expected that learners will understand the concepts of text formatting and file manipulation in order to enable them to develop creative skills in digital technology. Practical activities including manipulating images, text and numerical data will consolidate the theoretical aspects of this unit culminating in the creation of linked web pages.

Learners will be required to research emerging trends and will be encouraged to look at inclusive methods of communication and how they can be used effectively.

The learner may be introduced to this unit by asking themselves questions such as:

- What are the characteristics of different file formats and types?
- What is file compression and what are coding/decoding (CODECS)?
- How can I communicate information in different ways?
- What must I consider when creating web pages?

### Learning outcomes

In this unit, learners will be able to:

1. Understand file formats and their use
2. Communicate information creatively
3. Design, develop and create web pages

## Scope of content

This section gives details of the scope of content to be covered in the teaching of the unit to ensure that all the learning outcomes can be achieved.

## Learning outcome:

### 1. Understand file formats and their use

## Topics

- 1.1 Different file formats and their uses
- 1.2 Image compression and output
- 1.3 Creating and editing images

### Topic 1 .1

Learners will understand different types of file formats and their characteristics including:

- Productivity suites:
  - Word processing eg .docx, .odt
  - Spreadsheets eg .xlsx, .ods
  - Publishing eg .pub, .odp
  - Presentation eg .pptx, .key
- Images:
  - .raw
  - .bmp
  - .jpeg
  - .png
  - .webp
  - .wmf
  - .tiff
  - .eps
- Audio:
  - .mp3
  - .flac
- Video:
  - .mp4
  - .mpeg2
  - .mxf

Learners will understand how file formats can be used creatively in:

- Publications:
  - Word processed documents: Compatibility
  - Desktop publishing software:
    - Pagination columns, text box, alignment
    - Publishing options
- Images optimised for printing
- Electronic publications:
  - Web page
  - Mobile technologies

- Images optimised for electronic publication:
  - Presentations

### Topic 1.2

Learners will understand the application of file compression and file output formats to meet specific requirements such as high quality or speed of use:

- File compression:
  - Lossy
  - Lossless
- File outputs:
  - Vector
  - Raster

### Topic 1.3

Learners will understand how to create and edit images using the following file types:

- Vector
- Raster

## Learning outcome:

### 2. Communicate information creatively

## Topics

- 2.1 Creative use of digital content
- 2.2 Graphs and charts
- 2.3 Using digital technology to communicate

### Topic 2.1

Learners will understand factors that should be considered when using:

- Image:
  - Print quality v file size, file type
- Audio:
  - CODECS, software availability
- Video:
  - CODECS, cross platform compatibility issues
- Podcast:
  - Platforms, band width
- Social media:
  - Channels, privacy, availability
- Animation:
  - File format, cross platform compatibility issues
- Gaming:
  - Platforms, format, hardware, Pan European Games Information (PEGI) ratings

### Topic 2.2

Learners will understand the characteristics and uses of a range of graphs and charts, including:

- Line graph has X/Y axis displaying data points connected using a line, used for:
  - Trends
  - Correlation
- Bar chart has X/Y axis with each group of data is displayed as a block, used for:
  - Discrete data
  - Frequency
- Pie chart is a circle which is divided into segments as part of whole, used for:
  - Percentages
  - Relationships between items
- Scatter chart has an X/Y axis displaying data points, used for:
  - Dataset comparison
  - Cluster recognition
- Venn diagram illustrates how grouped data may overlap, used for:
  - Relationships between items

### Topic 2.3

Learners will select and use a range of techniques and file formats. These will be selected to engage an audience in order to improve communication of text, image and numerical information:

- Word processed documents
  - Images
  - Hyperlinks to aid navigation
- Interactive documents eg pdf
- Presentation software
  - Animations
  - Action buttons
  - Audio files
  - Video files
  - Animated gif
  - Hyperlinks to aid navigation
- Spreadsheets
  - Scatter chart
  - Sparklines
  - Pie chart 2D/3D
  - Column chart 2D/3D
  - Bar chart 2D/3D
  - Area Chart 2D/3D
- Mobile Apps eg image manipulation, word processing

### Learning outcome:

#### 3. Design, develop and create web pages

### Topics

3.1 Web design considerations

3.2 Creating linked web pages

### Topic 3.1

Learners will understand the considerations when designing web pages, including:

- Software:
  - Web authoring eg text editor, WYSIWYG
  - Image manipulation
- Domain name
- Protocols eg ftp, http, https, html
- Cross platform compatibility
- Cyber safety
- Colour safe palettes
- HTML Coding
- Accessibility eg <Alt> tags
- Legal considerations when publishing a web site:
  - Copyright restrictions
  - Data protection
  - Libel Laws

### Topic 3.2

Learners will understand how to create a website of linked pages that should incorporate the following content:

- Text
- Image files web optimised
- Video files
- Audio files

### Guidance for delivery

This unit builds upon the knowledge that has been gained in the *principles of technology* unit. As part of this unit learners will develop an understanding of software and the skills required to use them effectively. Centres may use software available to them. This may include vendor specific or open source applications. The unit will culminate in the creation of linked webpages to communicate information safely and effectively ensuring that the content produced has no negative impact on the learner or others.

### Learning Outcome 1

Tutors should be aware that the list of file formats are indicative content only and they should encourage learners to explore a wide range of both existing and emerging trends. This will be of particular importance when looking at mobile technologies.

Tutors should ensure that learners understand the impact that different file types and formats have on storage requirements both locally and remotely.

In topic 1.1 learners should be encouraged to use different file formats and types as practical in order to help them understand their characteristics.

### Learning Outcome 3

Tutors must ensure that learners are aware of the importance of complying with guidelines such as the W3C Accessibility



## Suggested learning resources

### Books

- Visual Creativity: Inspirational Ideas for Advertising, Animation and Digital Design  
Pricken, M & Klell, C
- Published by: Thames & Hudson, 2004
- ISBN: 9780500511664
- The Digital Negative: Raw Image Processing in Lightroom, Camera Raw, and Photoshop  
Schewe, J
- Published by: Peachpit Press, 2012
- ISBN: 9780321839572
- In Progress: See Inside a Lettering Artist's Sketchbook and Process, from Pencil to Vector  
Fili, L
- Published by: Chronicle Books, 2015
- ISBN-13: 9781452136226

### Websites

Modassic Marketing	<a href="https://modassicmarketing.com/understanding-image-file-types">https://modassicmarketing.com/understanding-image-file-types</a>
1 <sup>st</sup> Web Designer	<a href="http://www.1stwebdesigner.com/different-image-formats">http://www.1stwebdesigner.com/different-image-formats</a>
C-net	<a href="http://www.cnet.com/how-to/understanding-digital-video-files">http://www.cnet.com/how-to/understanding-digital-video-files</a>
About.com	<a href="http://netforbeginners.about.com/od/multimedia/f/codec.htm">http://netforbeginners.about.com/od/multimedia/f/codec.htm</a>

UAN:	K/507/7030
Level:	2
GLH:	30

### What is this unit about?

The purpose of this unit is that learners will understand how data can be gathered and used to make decisions.

Learners will be able to describe the processes in a logical way. The data will be gathered legally and ethically using a range of methods and then processed into information that will be useful to the reader of the completed report on the findings of the research process.

Modern computer systems allow individuals and organisations to process data using commonly available software and publish the outcomes to a range of destinations. Learners will be able to analyse and present structured data which has been gathered from primary and secondary resources, in a report.

A data project will provide the learners with the opportunity to consolidate the knowledge and skills developed in this unit.

The learner may be introduced to this unit by asking themselves questions such as:

- How can a researcher gather data?
- How can the researcher make sure data is of good quality?
- How can data be presented clearly?

### Learning outcomes

In this unit, learners will be able to:

1. Understand data collection methods
2. Understand data storage and software
3. Planning and implementing databases

## Scope of content

This section gives details of the scope of content to be covered in the teaching of the unit to ensure that all the learning outcomes can be achieved.

## Learning outcome:

### 1. Understand data collection methods

## Topics

- 1.1 Legal and ethical issues
- 1.2 Data collection methods
- 1.3 Reliability of data

### Topic 1.1

Learners must understand legal and ethical requirements relating to the collection and storage of data. They will describe the requirements of:

- Data protection laws: The Data Protection Act eg storage of data in the EU
- Intellectual property rights:
  - Copyright and plagiarism
  - Patent

Learners must also know about the increasing amount of data being gathered about them. They must be able to describe how this data is gathered:

- Internet sites and websites:
  - Cookies
  - Web-bots and web-mining
- Monitoring systems:
  - Closed-Circuit Television (CCTV)
  - Vehicle recognition
  - Facial recognition
  - Data logging
- Loyalty schemes
- Voluntary schemes such as:
  - Beta testing
  - Research panels

### Topic 1.2

Learners will understand the key differences between primary and secondary data. They must also understand data sources used for each:

- Primary, sources used:
  - Survey
  - Questionnaire
  - Interview
  - Focus group
- Secondary, sources used:
  - Printed and electronic sources:
    - Accounting systems

- Databases
- Newspapers
- Books
- Magazines/journals
- Internet
- Search engines eg refining search terms

Learners will also understand the differences between qualitative eg opinions and quantitative eg numeric data.

### Topic 1.3

Learners will understand factors that may affect the reliability of data and information gathered and be able to define the term provenance:

- Negative:
  - Small sample size
  - Bias
- Positive:
  - Selection of correct target groups
  - Standardised questioning

## Learning outcome:

### 2. Understand data storage and software

#### Topics

- 2.1 Records, files and storage sizes
- 2.2 Software used in data and information handling
- 2.3 Access control methods

### Topic 2.1

Learners must understand the types of data that can be stored electronically and in a database. Such data may include:

- Text
- Numeric
- Image
- Video and sound

Learners will understand how records are made up from pieces of information and how saving multiple records impacts on the storage requirements. They must understand the method used to calculate the size of a record and specify the types of data stored in each record.

### Topic 2.2

Learners must understand software used in data processing and management. The learner must understand how the following types of software are used to manipulate data:

- Spreadsheets:
  - Sheets
  - Formulae

- Functions
- Databases:
  - Data dictionaries
  - Flat-file structures
  - Relational:
    - Entity relationship diagrams (ERD)
    - Tables - fields and records
    - Primary and foreign keys
    - Relationships
    - Referential integrity

Learners should also be able to describe the advantages and limitations of the main software types:

- Text Editors
- Word processors
- Spreadsheets
- Databases

### Topic 2.3

Learners must know about the methods used to protect data held in electronic systems and published information based on it. The learner must be able to describe the following methods of protecting data and information shared over local and wide area networks:

- Authentication
- Permissions eg file and sharing permissions
- Encryption

## Learning outcome:

### 3. Planning and implementing databases

## Topics

#### 3.1 Planning databases

#### 3.2 Implementing databases

### Topic 3.1

Learners will understand how to plan and design a relational database to store and analyse information. The plan must include:

- software to be used
- data gathering methods
- conformance to legal requirements eg copyright
- data structures to present and classify information eg tables and reports

### Topic 3.2

Learners will understand how to implement the planned database. They will use the database to:

- Produce a report to analyse data
- Export data to create mail merge

## Guidance for delivery

This unit builds upon the knowledge that has been gained in the *principles of technology* unit. To enable learners to successfully complete this unit they should have knowledge and skills of word processing and spreadsheets. This can be achieved from undertaking the unit on the creative use of digital technology which contextualises the concepts of data presentation.

The topics covered in the unit will be useful in a broad range of situations where data is gathered and analysed. The data project could be locally contextualised to provide interest to the learners. It will need to cover the following areas:

- Planned methods for data storage
- Data gathered using primary and secondary research
- Data held legally
- Data stored in a database
- Structured reporting

Centres may use software available to them. There is no specific requirement to use any particular package for delivery of this unit.

### Learning Outcome 1

This will present learners with the opportunity to investigate the use of the strategies described and consider their advantages and limitations. Care must be taken to consider legislation current at the time of delivery.

They must understand the need to gather data ethically so that the rights of privacy are protected and that the people involved are not offended. Ethical issues may be covered usefully through consideration of a range of case studies provided by the tutor.

In topic 1.2 learners must understand how data is gathered for use in the presentation of information and the difference between data and information.

### Learning Outcome 2

Learners will be able to describe how data is stored and used with software to present information. They must be able to analyse the system storage requirements and this could be covered using case studies and set problems. This could be achieved by presenting the learners with raw data that can be restructured to be useful within a database system

In topic 2.2 learners must understand the overheads of implementing structured data such as meta data which is used to provide formatting information and details of data types used in data structures.

Learners will consider relational database systems and care must be taken to make sure that the model used allows demonstration of the knowledge of such systems without excessive depth. A database of three to four tables should allow the learner to cover all aspects.

### Learning Outcome 3

This learning outcome consolidates the concepts taught throughout this unit by allowing learners to gather and develop unstructured data into a report that could be used to analyse results.

In topic 3.2 it should be understood that the term mail merge is used in the context of field insertion into a separate document.

### Suggested learning resources

## Books

- Market research in Practice: A guide to the basics Hague, P
- Published by: Kogan Page, 2004
- ISBN-10: 0749441801
- ISBN-13: 978-0749441807
- Excel 2013 For Dummies Harvey, G
- Published by: John Wiley and Sons, 2013
- ISBN-10: 1118510127
- ISBN-13: 978-1118510124
- Data Science for Business : What you need to know about data mining and data-analytic thinking Provost, F & Fawcett, T.
- Published by: O'Reilly Media, 2013
- ISBN-10: 1449361323 ISBN-13: 978-1449361327

### **Websites**

University of Northumbria: How to Write a Report  
<https://www.northumbria.ac.uk/static/5007/2008pdf/howtowrite.pdf>

Plain English Campaign, 2001: How to write a report in plain English  
<https://www.plainenglish.co.uk/files/reportsguide.pdf>

Qualtrics. An introduction to Market Research  
<http://cloudfront.qualtrics.com/q1/wp-content/uploads/2012/02/IntrotoMarketResearch.pdf>

## Appendix 1 Sources of general information

The following documents contain essential information for centres delivering City & Guilds qualifications. They should be referred to in conjunction with this handbook. To download the documents and to find other useful documents, go to the **Centres and Training Providers homepage** on [www.cityandguilds.com](http://www.cityandguilds.com).

### *City & Guilds Centre Manual*

This document provides guidance for organisations wishing to become City & Guilds approved centres, as well as information for approved centres delivering City & Guilds qualifications. It covers the centre and qualification approval process as well as providing guidance on delivery, assessment and quality assurance for approved centres.

It also details the City & Guilds requirements for ongoing centre and qualification approval, and provides examples of best practice for centres. Specifically, the document includes sections on:

- the centre and qualification approval process
- assessment, internal quality assurance and examination roles at the centre
- registration and certification of candidates
- non-compliance and malpractice
- complaints and appeals
- equal opportunities
- data protection
- management systems
- maintaining records
- internal quality assurance
- external quality assurance.

### *Our Quality Assurance Requirements*

This document explains the requirements for the delivery, assessment and awarding of our qualifications. All centres working with City & Guilds must adopt and implement these requirements across all of their qualification provision. Specifically, this document:

- specifies the quality assurance and control requirements that apply to all centres
- sets out the basis for securing high standards, for all our qualifications and/or assessments
- details the impact on centres of non-compliance

The **centre homepage** section of the City & Guilds website also contains useful information on

- **Walled Garden:** how to register and certificate candidates on line
- **Events:** dates and information on the latest Centre events
- **Online assessment:** how to register for e-assessments.





## Useful contacts

<b>UK learners</b> General qualification information	<b>E: <a href="mailto:learnersupport@cityandguilds.com">learnersupport@cityandguilds.com</a></b>
<b>International learners</b> General qualification information	<b>E: <a href="mailto:intcg@cityandguilds.com">intcg@cityandguilds.com</a></b>
<b>Centres</b> Exam entries, Certificates, Registrations/enrolment, Invoices, Missing or late exam materials, Nominal roll reports, Results	<b>E: <a href="mailto:centresupport@cityandguilds.com">centresupport@cityandguilds.com</a></b>
<b>Single subject qualifications</b> Exam entries, Results, Certification, Missing or late exam materials, Incorrect exam papers, Forms request (BB, results entry), Exam date and time change	<b>E: <a href="mailto:singlesubjects@cityandguilds.com">singlesubjects@cityandguilds.com</a></b>
<b>International awards</b> Results, Entries, Enrolments, Invoices, Missing or late exam materials, Nominal roll reports	<b>E: <a href="mailto:intops@cityandguilds.com">intops@cityandguilds.com</a></b>
<b>Walled Garden</b> Re-issue of password or username, Technical problems, Entries, Results, e-assessment, Navigation, User/menu option, Problems	<b>E: <a href="mailto:walledgarden@cityandguilds.com">walledgarden@cityandguilds.com</a></b>
<b>Employer</b> Employer solutions, Mapping, Accreditation, Development Skills, Consultancy	<b>E: <a href="mailto:business@cityandguilds.com">business@cityandguilds.com</a></b>

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If you have a complaint, or any suggestions for improvement about any of the services that we provide, email: **[feedbackandcomplaints@cityandguilds.com](mailto:feedbackandcomplaints@cityandguilds.com)**

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## About City & Guilds

As the UK's leading vocational education organisation, City & Guilds is leading the talent revolution by inspiring people to unlock their potential and develop their skills. City & Guilds is recognised and respected by employers across the world as a sign of quality and exceptional training.

## City & Guilds Group

The City & Guilds Group is a leader in global skills development. Our purpose is to help people and organisations to develop their skills for personal and economic growth. Made up of City & Guilds, City & Guilds Kineo, The Oxford Group and ILM, we work with education providers, businesses and governments in over 100 countries.

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